

## D6.6 Commercial actions report V3 August 2020 (M36)

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## Revision History

Version	Changes
V3.0	Submitted to internal reviewers 25.08.2020
V3.1	Submitted to the European Commission 31.08. 2020

## Executive Summary

This third and final version of the ‘Commercial actions report’ deliverable presents the latest commercialisation developments and future plans for the CS-AWARE platform: final exploitable results are fully defined, then updated market analysis with COVID-19 constraints is presented; a detailed analysis of competition and pricing, risks analysis for the last reporting period of the project (March 2019 - August 2020) is also highlighted. The consortium decided that commercially sensitive aspects such as detailed competition analysis, pricing and investment plans are to be listed in Annex 1 of this deliverable for consortium and EC use only use.

## 1 Introduction

This document is the update of the deliverable D6.5 Commercial actions report V2, February 2019. We updated in this document only the new developments and changes provided by the consortium partners for the last reporting period.

## 2 Aimed exploitable results

### 2.1 Goal and features of the solution

No change from version V2.0

#### 2.1.1 Visualisation and decision support

No change from version V1.0

#### 2.1.2 Situational awareness

No change from version V1.0

#### 2.1.3 System self-healing

No change from version V1.0

#### 2.1.4 Customer’s (end user’s) perspective

No change from version V1.0

#### 2.1.5 An example scenario

No change from version V1.0



## 2.2 Delineating the CS-AWARE product

The commercial offering and potential revenue streams have not changed since Version 2 of this document (Section 2.2 of Deliverable D6.5):

- 1) Consultancy services to create a baseline cybersecurity awareness within an organisation as well as to stimulate the information needed to instantiate and configure instantiations of the CS-AWARE platform for individual organisations. Since D6.5 was published, we have created a structured methodology of how to conduct this analysis based on the soft systems methodology (SSM), which was described in CS-AWARE deliverable D2.5. *As concluded in CS-AWARE deliverable D2.5, it is our assumption that large LPAs (Local Public Administrations) require in-depth local systems analysis with the help of professional consultancy, while small and, to some extent medium sized LPAs will be able to do this analysis in-house based on the procedures and guidelines provided in D2.5.* However, the small/medium size LPAs may lack either financial or human resources to do such analysis and therefore, it will be the job of the consultancy team of CS-AWARE to find the most suitable solution.
- 2) The CS-AWARE platform for cybersecurity awareness, system self-healing and cybersecurity information sharing, according to the architecture and framework described in CS-AWARE deliverable D2.4. Since D6.5 was published, the platform development has reached the envisioned TRL level 7, functional testing of components and integrations has successfully concluded and the platform was tested in real-world pilot use cases in the municipalities of Larissa and Rome. The next step beyond the scope of the CS-AWARE project, driven by the CS-AWARE spin-out, will be to secure funding to mature the CS-AWARE platform to market readiness (TRL9).

## 3 SWOT analysis

No change from version V2.0

## 4 Advanced market analysis

### 4.1 Selected countries profiles

On the initial market analysis work, there are no core changes from the previous version. However, all markets are impacted by COVID-19 pandemic and therefore have their normal dynamics altered. Below we list the COVID-19 impact on EU LPAs market:

#### **COVID-19 General Impact on LPAs [1], [2]**

The regional and local impact of the COVID-19 crisis in Europe, as elsewhere, has been very heterogeneous, with a pronounced territorial dimension and significant implications for crisis management and policy responses. Depending on the country, the regions and municipalities are typically called on to manage the critical aspects of health care, social services, economic development and almost 60% of public investment, placing them clearly on the frontline of crisis management.



Three types of impact on LPAs can be identified:

- **Health/social impact:** some regions, particularly the more exposed ones, such as deprived urban areas, have seen higher caseloads and mortality rates than others.
- **Economic Impact:** regional economic exposure to the crisis varies depending on an area's exposure to global value chains and specialization in sectors like tourism.
- **Fiscal impact:** the crisis has led to increased expenditures and reduced revenues for municipalities, and while its impact on municipal finances is not uniform, it is expected to be long-lasting.

Given the complicated nature of the COVID-19 crisis, comparisons with previous ones, including the 2008-2009 financial crisis, are difficult. The impact of the COVID-19 crisis is also quite varied, with a strong territorial dimension that has important policy implications for managing its consequences. Two central considerations for policymakers can be distinguished:

- **The regional and local impact of the crisis** has been, at times, very asymmetric even within countries. Some regions, particularly the more exposed ones, such as deprived urban areas, have been harder hit than others. Certain vulnerable populations have been more affected too. In economic terms, the impact of the crisis has been different across regions, at least in its initial stages. Factors include a region's exposure to tradable sectors, its exposure to global value chains, and its own specialization, such as tourism.
- **Local governments** – regions and municipalities have been responsible for critical aspects of containment measures, health care, social services, economic development, and public investment, putting them at the frontline of crisis management. Because such responsibilities are shared among levels of government, a coordinated effort has been critical to meet the new demands on services and resources. While not rejecting new innovative projects like CS-AWARE, local officials have made it clear that they have other more pressing priorities at the moment.
- **Central governments** - the huge central government borrowings may have a strong impact on local government budgets. The UK public debt is now 2T and the borrowings from April-July this year reached an unprecedented £150.5B - as it "was almost three times the £56.6 billion borrowed in the whole of the latest full financial year (April 2019 to March 2020)" [9]. This borrowed money will have to be paid back and local government budgets may be pared down as result. Similarly, in Ireland 'the government debt is currently high in historical and international terms. Further the report says "The COVID-19 virus outbreak and the dramatic economic restrictions will have a significant effect on the public finances. Given the unprecedented scale of business closures to prevent the spread of the COVID-19 pandemic, extra spending will be needed to help mitigate the impacts on individuals affected. This additional spending will result in a budget deficit in 2020. Lower tax receipts (e.g. income tax, VAT and excise) will result in an even larger deficit. This will cause debt levels to rise and depending on the duration and scale of the COVID-19 pandemic, this could be by a substantial amount. Ireland currently has a high level of Government debt (in both international and historical terms). This problem is compounded by the fact that the other key sectors of the economy are also heavily indebted, including households, non-financial corporations and the financial sector.



## Most countries have been under-prepared for this crisis

Most countries, regions, and municipalities were not well prepared for this pandemic for several reasons:

- they underestimated the risk when the outbreak emerged;
- many did not have crisis management plans for pandemics;
- they lacked basic equipment, such as masks, and they have had to face and absorb reduced public expenditure and investment in health care/hospitals;
- between 2008 and 2018, the number of hospital beds per capita decreased in almost all OECD countries, declining 0.7% per year, on average.

## Local and Regional Governments at the front-line of crisis management

Regional and local governments are on the front-line of the COVID-19 crisis and its social and economic consequences. They have responsibilities in a variety of areas impacted by the COVID-19 crisis, along with central governments. In many countries, local governments are responsible for key aspects of health care, from primary to secondary care.

Since the beginning of the crisis, regions, and municipalities are facing increasingly urgent social needs, from a variety of groups ranging from the elderly, children, disabled, homeless, migrants and other vulnerable populations. Local and regional governments are often directly responsible for welfare services in many countries. In addition, local governments often play a large role in delivering educational services.

Local and regional governments must, also, ensure the continuity of public services in a crisis context, adapting these as necessary. Citizens expect continuity in the supply of basic public services, such as water distribution and sanitation, waste collection, street cleaning, public transport, public order, and other basic administrative services. The proper delivery of many of these services is fundamental to managing the effects of the pandemic.

Regional and local governments are responding by maintaining essential services and by developing or providing increased access to teleservices. Finally, the emergency situation has pushed a number of local and regional governments to take initiatives in areas not necessarily in the scope of their responsibilities, either because it was requested by the central government or because they decided to do so to respond to emergencies that have arisen in their territory. Beyond some basic security procedures, municipal officials frequently do not perceive cybersecurity as a priority in terms of managing issues created by the crisis.

## Territorial Impact of the economic crisis provoked by COVID-19.

The economic impact of the COVID-19 crisis varies across regions, depending on the region's exposure to commercially active sectors and global value chains. For example, regions with economies that are heavily dependent on the tourism industry, like Italy and Greece, have been more affected by the coronavirus than other regions. Capital regions or other metropolitan regions show, according to OECD, a relatively higher risk of job disruption than other regions.

The impact of the crisis on regional employment and GDP may vary significantly across regions, even within countries. The degree to which regions are exposed to global value chains, are specialized in specific sectors, and have large shares of non-standard employment could help explain internal country differences arising from the COVID-19 crisis. The longer the containment measures last, the

higher the risk may be for regional economies. Previous OECD work has shown that the recovery of OECD regions after the 2008 global financial crisis took longer than initially expected. In more than 40% of OECD and EU regions, even seven years after the start of the crisis, per capita GDP was still below pre-crisis levels.

### Asymmetric fiscal impact on local and regional governments

The impact of COVID-19 on local and regional finances has differed from country to country. According to OECD, the varying effects on local finances depend on; five main factors:

- The first is the **degree of decentralization of the country and the assignment of spending responsibilities**. The role of regions and cities in managing the crisis can vary depending on the scope of their responsibilities;
- The second factor is the **characteristics of local government revenues**, in particular, their degree of sensitivity to economic fluctuations;
- The third factor is “**fiscal flexibility**” i.e. the ability of local governments to absorb exceptional stress, their capacity to adjust their expenditure and revenues to urgent needs;
- The fourth factor is **fiscal health or financial condition** of a given local government;
- The impact on finance also depends heavily on the **scope and efficiency of support policies from higher levels of government**.

All these factors need to be considered in order to analyse the fiscal impact of the current crisis on regions and municipalities in the different countries in Europe.

**It is difficult to quantify the impact, as the crisis is unfolding.** There are many uncertainties surrounding its severity, duration, variability across Europe, and the effectiveness of the support mechanisms introduced by international, national, and local public authorities. Another factor to consider is time. While short-term impacts have been identified, there will be additional effects on local finances in the medium and long-term, and these are likely to have a much greater impact in the long run.

At this stage, it is only possible to characterize the different types of impact and identify certain trends. Both the recession and fiscal discretionary measures could lead to a public finance crisis together with a public debt crisis. At some point, countries will have to rebalance their public finance. Fiscal consolidation plans, if adopted, would put additional pressure on local budgets, resulting in risks of using public investment as an adjustment variable, as it was the case, according to the OECD, after 2010 with a strong drop in public investment, as observed in OECD and EU countries until recently. The effects of this “systemic” crisis have occurred on two levels: first, on local government assets and liabilities and, secondly, on the “flows,” that is, on local government budgets.

### Local government budgets will be strongly affected

Local government finances are being seriously impacted, with strong pressure on expenditures and reduced revenues, thus increasing deficits. While the crisis has already put short-term pressure on health and social expenditures and on categories of revenue, it is in the medium-term that the strongest impact is expected. National governments, associations of local governments, and individual entities have started to estimate the fiscal impact in the short- and medium-term, in order to prepare and adjust budgets, and to try to design appropriate measures to support local finances.



## The impact on local government expenditures

This crisis is calling on regions and cities to increase their expenditure in many areas. The impact of this, however, will vary according to their spending responsibilities. In many countries, local governments are responsible for critical aspects of health care systems, including emergency services and hospitals. Beyond health and social responsibilities, local governments are involved in key areas impacted by the crisis, including education (the first spending item at 24%), public administration (15%), economic development and transport (13%), public order and safety (7%), utilities (waste, water, etc.), etc.

### **The impact on health expenditure will certainly be significant**

In a number of countries, local and regional governments carry responsibility for public health services and hospital spending. Local governments account for about 24.5% of total public health expenditure in the OECD and 12% of local government expenditure. However, the degree of decentralization in the health sector varies significantly.

This crisis has had a varying impact on the local government sector. In most federal countries, health care is a major responsibility of state governments, which are responsible for secondary care, hospitals, and specialized medical services. In unitary countries such as Denmark, Italy and Sweden, health care is a regional-level responsibility, and the role of regional governments may also be significant. The role of municipalities in health care generally concentrates on primary care centres and prevention. However, in some countries, municipalities or inter-municipal cooperation bodies may have wide responsibilities in healthcare services and infrastructure, thus impacting the choices of municipalities in other areas.

While it is too early to make definitive predictions about what impact the current crisis will have on health expenditures, municipal leaders are concerned about what may happen in the short term and are reluctant to embark on new programs until the current crisis becomes less urgent.

### **The impact on social expenditure is significant and will be long-lasting**

Among OECD countries, social protection represents 14% of total public social expenditure, though this is much higher in countries where local governments have significant social protection responsibilities (e.g. Austria, Belgium, Germany, Japan, the Nordic countries, and the United Kingdom). This indicates that local governments are not mobilized in the same way for social services, despite the fact that local governments are often the first resort for citizens in need. **Even if social protection is out of a local government's scope, it often has to respond to social emergencies.** During the emergency, local governments have undertaken proactive initiatives to provide community support to vulnerable populations. In the longer term, social expenditure will certainly increase further, as more welfare benefits will be included due to the rise in unemployment. Unemployment payments, guaranteed minimum income, family support, housing subsidies, emergency aid, etc. will all add to local government social expenditures.

### **The impact on economic affairs expenditure**

Economic affairs represent 13.6% of local spending on average in the OECD. Local governments in the OECD account for approximately 34% of total public spending in this area (Figure 1.4), although in some countries it is more than 50% (e.g. Australia, Belgium, Japan, and Spain), and in the US it has reached 69%. Some state and regional governments, as well as local governments, took early



action to support their local economies, focusing mainly on SMEs, the self-employed, and informal workers, as well as ~~on~~ sectors that were particularly affected, such as tourism, trade, restaurants, etc.

### The impact on local government revenues

The COVID-19 crisis will likely generate a large drop in local government revenue due to the decrease in tax revenue, user charges and fees, and income from physical and financial assets. The ultimate impact on local governance finance, however, will depend on what happens to the revenue sources. In countries where local governments are largely funded by central government, the negative impact may be small, especially if the central government decides to maintain their current levels of funding, or even increase them in order to help local governments cope with the increased costs arising from the crisis. In countries where local government revenues come mainly from taxes, user charges, and fees the impact may be larger, although this depends on their degree of sensitivity to economic fluctuations and policy decisions. It is yet to be seen how the EU emergency funds will deflect this issue.

### The impact on tax revenues

The COVID-19 pandemic is expected to result in a strong drop in tax revenues especially for LPAs. Declining economic activity, employment, and consumption arising from COVID-19, and particularly containment measures, will automatically reduce receipts from personal income taxes (PIT), corporate income taxes (CIT), and value-added taxes (VAT). In addition, measures such as tax breaks, exemptions, deferrals, and a drop in rates that were decided in recovery packages by national and local governments could cause a drop in tax receipts. Many regional governments and municipalities have adopted tax relief measures to support firms and households. A majority of these include a variety of tax measures that will result in decreased tax receipts for local government budgets. As local government revenues are often based on the previous year's activity (for instance, income taxes), most will see the situation worsen in 2021 and even 2022, regardless of the degree of national-level recovery.

### COVID-19 further implications for our target markets:

#### 4.1.1.1 Greek market

The COVID-19 pandemic affected the Greek LPAs in multiple ways. In particular, the issues faced by the Municipality of Larissa are described and it's expected that the majority of the Greek LPAs have similar experiences.

Firstly, COVID-19 created an increased need for remote working, not only for the IT admins, but also for the vast majority of staff. Despite the fact that VPN connectivity was available via the Syzefxis network, several other factors had to be determined, such as which users need to be connected via VPN and how would the task allocation be performed. However, there was increased concern about security issues, since users were mainly connected to the LPA's systems through their home computers, which were expected to significantly diverge from the LPA's security policy (antivirus protection, updates, access control to files, etc). The notion of BYOD (Bring Your Own Device) was introduced overnight without the normal considerations and implementation procedures.

Considerable effort was put into organizing and setting up the various teleconferencing applications. This was due to compatibility issues that emerged from having multiple operating systems and varying degrees of connectivity. In addition, there was a need for many webcams, since desktop computers usually aren't equipped with a webcam and/or a microphone. What is more, there were



several cases where IT admins had to visit City Council members at their homes, to configure the teleconferencing hardware.

Another issue was that the users themselves had to learn to work remotely from their homes, without the technical and administrative support they would normally receive in ~~at~~ their offices. At the same time, they had to perform their office work by using their personal computers. In order to continue serving its citizens, the Municipality of Larissa had to quickly turn to e-services. An interoperability platform was built to support the most basic services that citizens would need, and the platform will be expanded in future to support additional online e-services for citizens.

#### 4.1.1.2 Italian market and Spanish market

#### The differentiated impact of COVID-19 among local governments in Italy [3], [4]

As of August 2020, it is still too early to predict with any precision what will happen, as the situation remains in a state of flux. The state of emergency has been extended to October 15<sup>th</sup>, 2020. Many public and private sector employees continue using “smart working” until the end of 2020 and into 2021. Several of the larger municipalities that benefit greatly from tourism (such as Rimini, Florence, Venice, Rome, Palermo, and Naples) have already warned the government that they may be at risk of default if not subsidized and allowed to re-open activities and beaches for the tourist season.

**Recent estimates of the possible losses in municipal revenues due to COVID-19 can be grouped three possible scenarios [2]:**

- **A low-risk scenario** is a loss of revenue among municipalities of about EUR 3.7 billion (down 9% compared to 2019). This is based on a relatively rapid exit from the emergency beginning in 2020, where the largest losses would be concentrated on the sectors directly exposed to the crisis (particularly tourism), with other sectors recovering relatively quickly in 2020 or by 2021. The project-related activity of dissemination and commercialization could possibly restart in 2021 as economic activity, particularly in areas like tourism, resume. Until the state of emergency has been cancelled and Italy enters into a new phase with less economic and social uncertainties, municipalities will not be receptive to any dissemination and commercialization activity of the Project.
- **A medium-risk scenario** is associated with an estimated revenue loss of about EUR 5.6 billion (a decrease of 14% from 2019). Under this scenario, any substantial dissemination and commercialization efforts will be postponed into the summer or autumn of 2021. Much will depend on the efforts of the Government to provide support for local and regional government activities.
- **A high-risk scenario** is where a loss of EUR 8 billion (a drop of almost 21% over 2019) is predicted. In this scenario, COVID-19 triggers a major and continuing national and international economic crisis that causes recovery difficulties for all economic sectors. If the "high-risk" scenario develops, it will be difficult to make any estimates of when dissemination and commercialization of the Project results might begin.

Regional governments are also facing financial difficulties. Most of their expenditure tends to be concentrated on health (85% on average), which will increase. Further impacts include the drop in receipts from the regional tax on productive output (IRAP), the regional surtax on the personal income tax, and the regional tax on vehicles, since regions are expected to collect these taxes.

In Spain, according to the OECD, the economic impact of the crisis is putting pressure on Spanish regional and local government finances. Local communities will be more affected than municipalities



because a larger share of their revenue (that is, shares of VAT and PIT) is exposed to the economic cycle – 65%-70% of their operating revenue is directly linked to regional GDP growth, and they are facing a significant increase in spending to deal with the current crisis. As a consequence, there will be less interest in trying to develop new programs or activities among municipalities.

#### 4.1.1.3 UK market

According to World Bank (April 2020) [5], world-wide governments are taking emergency financial measures to continuously support the COVID-19 pandemic response: “One question that has emerged in policy discussions is whether, and in what circumstances, reductions in the public sector wage bill, which accounts for roughly 8% of GDP and 30% of government expenditures globally, may be helpful to finance some of this emergency response. Is this a good idea, and when?”

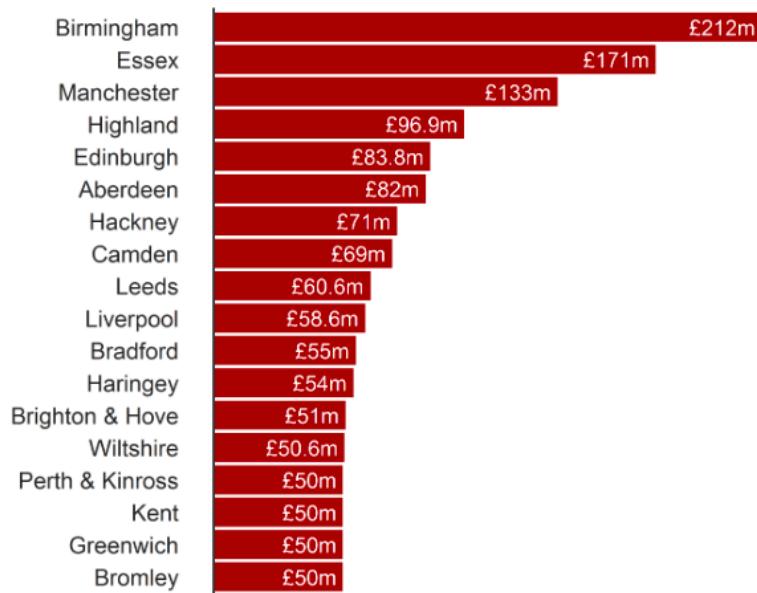
While the answer for the above question is still debated in various countries around the world, in the UK, according to a The Guardian report, “mayors in some of England’s biggest cities are warning that local authorities are at risk of going bust with potentially devastating consequences for communities unless the government takes immediate action.” [6]. The mayor of London warned in an interview about the risk of a new austerity era that if no government support is provided business rates, council taxes and transport fares will decline significantly because of the virus, which will force local authorities to make significant savings to balance their budgets.

According to the same article: “Councils across the Liverpool city region estimated their COVID-19 bill is likely to be about £341m over the next six months. With only £100m allocated so far from central government, concern is growing that the region’s local authorities are staring at a shortfall of almost a quarter of a billion pounds. “

The reason why local councils are struggling financially is because of lost business rates, council tax holidays, and emergency payment for families whose incomes have disappeared. Some councils that which typically depend upon tourism have seen a large part of their revenues cut from dividends from the airports, parking fees from visitors etc.

Next, we show a figure of potential shortfall in income for some English councils:

### Potential shortfall as a result of the pandemic



Figures for English councils are shortfalls after their share of a £3.2bn government fund has been taken into account

Source: BBC research

BBC

Figure 1 Potential income shortfall – England, UK

Then, “plummeting passenger numbers at Luton Airport are contributing to a £49m shortfall” at the authority which owns it, Luton Borough Council. A spokesman said it would have “no option but to agree to unprecedented cuts to key services” if more cash was not made available.”

Also, according to BBC [7] June 2020, Councils in England face large-scale cuts to services. “A report for the County Councils Network found that 39 local authorities face a funding shortfall of £2.5bn. It warned councils may have to “use up” all their reserve money by next year to deal with the fallout from coronavirus. The government said it was giving councils “unprecedented” support including £3.2bn in emergency funds.”

All the above data shows that local administration in UK is quite seriously affected by the pandemic and, in spite of the government help, they may continue to be seriously under-funded and need to allocate their funds to emergency social cases and maintenance of critical services.

It should also be noted that since the UK is no longer a member of the EU, it does not qualify for common emergency funding, even in the transition period that its government has decided not to ask for prolongation of.

## 4.2 Segmentation of customers

There is no change from the previous version

## 4.3 Competition and pricing

This information can be found in Annex 1.1. D6.6 Confidential: CS-AWARE pricing strategy



## 5 Go-to-market analysis

### 5.1 Product Strategy

No change from previous version

### 5.2 Marketing Strategy

No major change from previous version; final pricing can be found in Annex 1.1. D6.6 Confidential: CS-AWARE pricing strategy

### 5.4 Customer Experience

No change from previous version

### 5.5 Technical Requirements

No change from previous version

### 5.6 Evaluation

An in-depth final evaluation of the usability of CS-AWARE platform with local public administrations is detailed fully in D5.3.

### 5.7 Timeline and Execution

While the original planning stays unchanged, COVID-19 has created a delay in applying the marketing strategy.

### 5.8 Positioning of the CS-AWARE brand

No change from previous version

### 5.9 Communication Channels

No change from previous version

### 5.10 Sales Channels

No change from previous version except that all sales strategies will need to adapt, taking into account COVID-19 business environment. However, the end user targets remain unchanged.

### 5.11 Anticipating difficult market entry in times of austerity and cuts in public spending

Combining the CS-AWARE offer with complementary solutions of interest to municipalities may be a means to persuade local governments to consider the CS-AWARE platform.



## 6 Risk analysis and mitigation

Apart from the risks identified in the previous reporting period that remain unchanged, we have 2 important updates to detail:

### 6.1 COVID-19 risks

For the foreseeable future, COVID-19 remains the major risk for future commercialization both via spin-out and individual commercial initiatives of the CS-AWARE platform. According to a McKinsey July 2020 report entitled "COVID-19 crisis shifts cybersecurity priorities and budgets" [8], "Cybersecurity technology and service providers are shifting priorities to support current needs: business continuity, remote work, and planning for transition to the next normal." The research found that over 70 % of security executives believed that their budgets for fiscal year 2021 will shrink, but they plan to ask for significant increase in 2021. Therefore, "supporting new tactics to safeguard organizations is expected to limit outlays for such things as compliance, governance, and risk tools. For corporate security-operations centres, the cost of securing the fundamentals could reduce budgets for more advanced threat-intelligence upgrades, behavioural analytics, and other tooling." While cybersecurity budgets in financial services and the insurance industry may be increased, decreases are expected in other sectors such as healthcare and retail. The report also states that IT cybersecurity spending within large enterprises is expected to bounce back faster than in SMEs. Companies will continue to prioritize short-term spending on security for remote workers. McKinsey also expects them to spend on e-commerce security that can be scaled to cover increased activity, and this includes (the SMEs that use third parties to provide such services). That could result in higher spending on pay-per-seat and pay-per-megabyte licenses and ultimately cause companies to shift additional funds from in-house systems to outsourced services. The next figure describes the cybersecurity industry shift on spending due to COVID-19 crisis:

**The COVID-19 crisis is expected to shift cybersecurity spending by industry and product category.**

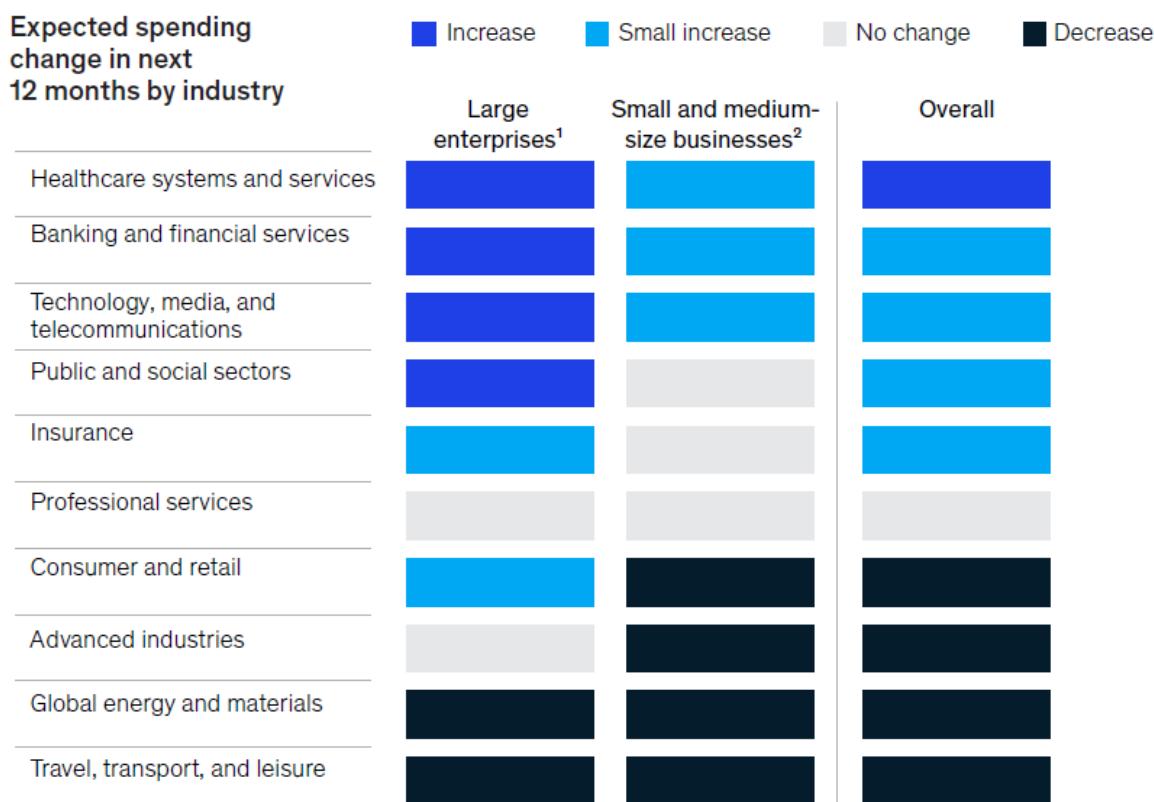


Figure 2 Cybersecurity spending shift due to COVID-19

Contingency plans for the CS-AWARE team, post-project commercialization actions:

- anticipate customer's-needs
  - identify issues to address with CS-AWARE
  - identify external funding (grants/local funds) to use for CS-AWARE implementation and use it at the client site
- adjust our technology to address urgent problems
  - agile adjustment of existing features
  - new features to add if critical
- asses the offering and adapt
  - look continuously at the competition and be technologically ahead
  - pivot to new functionality offering if the market requires it
- invest in business relationships
  - maintaining commercial relationships are essential, especially in the LPAs space. While current circumstances with COVID-19 are quite difficult, in future the situation may change and good relationships may bring commercial results.
  - identify complementary solutions of interest to LPAs and explore collaborative partnerships as an alternative channel to market



## 6.2 Brexit risks

While this has been an ongoing risk since the start of the project, the business relations between the EU and the UK still remains undefined and unpredictable, with no agreement in place as of writing in by August 2020. In this respect the biggest risk is a 'no deal' scenario that would imply a fall-back to the WTO trading rules, and would involve tariffs to on any exports to UK from EU, which will make CS-AWARE solution more expensive in that market. It remains to be seen what the level of taxation will be, but it is definitely a risk. As mitigations, we need to consider a flexible pricing policy, as well as focus on features that are not currently offered in the UK market.

As the UK is not participating in the emergency packages of the EU, it is also a risk that its local authorities will not be able to afford to purchase the IT Security Awareness that CS-AWARE can provide. While this is counterproductive, it remains another difficulty to overcome in the UK market.

## 7 Commercial actions

As the commercial actions, which were planned to happen in 2020, were stalled by the COVID-19 pandemic, the originally intended meetings could not occur. Still, as the markets are rebounding and economies are showing initial signs of recovery as of August 2020, the commercial partners have scheduled further actions as follows:

**The Spin-out**, once scheduled for October 2020 ongoing, will focus on the LPA markets in Greece, Italy and the UK. All contacts that we have made during the project lifetime will form the prospects database of the new spin-out and will be revisited and followed-up with.

**Cesviter** will initially concentrate in 2020 and 2021 on offering consultancy services to small and medium-sized municipalities to foster the creation and diffusion of cybersecurity awareness and to elicit the information necessary to "instantiate and configure instantiations" of the CS-AWARE platform in Italy and Spain. With the publication of D6.5, a structured methodology was compiled on how to conduct this analysis using soft systems methodology (SSM) and subsequently described in CS-AWARE deliverable D2.5. For many of the smaller and even medium-sized municipalities in these countries, experience suggests that these municipalities will not be able to conduct this type of analysis on their own.

Assuming the "**medium-risk scenario**" outlined above may develop, this will mean that any substantial dissemination and commercialization efforts will be postponed into the summer or autumn of 2021. The eventual outcome will depend a great deal on the efforts of the Central Governments to provide support for local and regional government activities.

Much will also depend on completing the next step beyond the scope of the CS-AWARE project with the CS-AWARE spin-out, securing funding to mature the CS-AWARE platform to market readiness (TRL9). Before the COVID-19 crisis, many municipalities were quite interested in the CS-AWARE Project. In particular, there was a great deal of interest in the analysis phase that would precede the installation of the platform. What remains critical is to bring the platform up to market readiness (TRL9) so that further commercial initiatives can take place.

**Peracon** will focus on the financial markets (UK/France/Ireland) in late 2020 and 2021 and plan demonstrations of CS-AWARE to selected prospects. The business meetings and interest will be depending upon how the COVID-19 situation evolves and whether if a travel quarantine will be re-instated (or not) between EU countries. If a quarantine is re-instated, business trips will not be



possible so a slower development may happen. Peracton will also assist in parallel the Spin-out future development as technical partner.

## 8 Conclusions and future work

Deliverables during the past three versions documented all the commercialization modelling, efforts and challenges for the developed CS-AWARE platform. While there were various challenges on the way and an unexpected and unprecedented COVID-19 pandemic which slowed our progress in the last year of the project, we achieved a solid understanding of the market, and gained valuable feedback during various demonstrations along the way. Lastly, we are firmly on the path of post-project commercialization via a dedicated and independent spin-out.

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